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February 14, 2014

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Re: COMMENTS Re: Proposed Issuance of a Combined NPDES and State Waste Discharge General Permit for *Zostera Japonica* Management for Commercial Clam Beds in Willapa Bay and Draft Environmental Impact Statement to Manage *Zostera Japonica* on Commercial Shellfish Beds and Scoping Document Comments for the Application of the Pesticide Imidicloprid to Manage Burrowing Shrimp in Washington State Waters

Gentlemen:

On behalf of the Coalition to Protect Puget Sound Habitat, we submit the following comments in opposition to Ecology's proposed issuance of a combined National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for the application of the herbicide Imazamox to manage *Zostera japonica* (Japanese eelgrass) on commercial shellfish beds in Willapa Bay. In addition we have included comments regarding the scope of the upcoming Environmental Impact Statement (EIS) for the use of Imidicloprid to manage burrowing shrimp on commercial shellfish beds in Willapa Bay and Grays Harbor. The Coalition to Protect Puget Sound Habitat, has as its goal, the protection of the ecosystem that supports Washington's marine habitat and wildlife. Its mission is to voice citizen's concerns of aquaculture, its impact to the health and quality of Puget Sound and coastal waters, including Willapa Bay, and to effect changes to policies, regulations, and their enforcement to protect shoreline habitat. Of particular concern to the Coalition is the prospect that the draft Permit and EIS may be found applicable to Puget Sound based upon comments made by Ecology staff to Coalition members.

1. Comments on the Application of the Herbicide Imazamox

We have analyzed numerous documents, including (1) the draft EIS Statement: Management of *Zostera japonica* on Commercial Clam beds in Willapa Bay, Washington; (2)

the draft NPDES permit; (3) the Fact Sheet for the State of Washington *Zostera japonica* management on commercial clam beds in Willapa Bay. In addition, Coalition members have discussed this proposal with Ecology staff and received clarifying information that has assisted us in better understanding the provisions of the proposed NPDES Permit and the intent behind it.

A. The Spraying of Imazamox Will Violate Eelgrass Protections in Washington and Threaten Valuable Wildlife Habitat and Species Throughout Willapa Bay, Grays Harbor and Puget Sound

The shellfish industry has made it clear in their "Pest Management Strategic Plan for Bivalves in Oregon and Washington that they consider both *Zostera japonica* (Japanese eelgrass) and *Zostera marina* (native eelgrass) as "weeds/pests" that interfere with the success of extensive industrial aquaculture, and there is no doubt that they seek to destroy both varieties. See http://washington.sierraclub.org/tatoosh/Aquaculture/OR-WAbivalvePMSP.pdf

Federal and state authorities have developed an extensive regulatory scheme that recognizes the ecological value of *Zostera japonica*. A host of existing state and federal regulatory protections for both *Zostera marina* and *Zostera japonica* will be violated or implicated by the issuance of the proposed Permit. These plant protections include, but are not limited to, the following statutory and regulatory provisions: RCW 77.115.010, 77.12.047, 77.60.060, 77.60.080, 77.65.210, 77.115.030 and 77.115.040, the Hydraulic Code Rules set forth at WAC 220-110-250, the Shoreline Management Act, RCW 90.58.010, et seq. and its implementing rules, including those set forth in WAC 173-26-221, 173-26-241(3)(b)(i)(c). and WAC 174-27, the Growth Management Act and Fish and Wildlife Habitat Conservation Areas, as well as Army Corps of Engineers Nationwide Permit 48, Regional General Permit 48, Regional General Permit 6, the Critical Area Ordinance identifying the fish and wildlife habitat conservation areas, the Pacific Coast Groundfish Fishery Management Plan identifying Habitat Areas of Particular Concern 7.3, and the WDFW Priority Habitat Puget Sound Nearshore established by WDFW in 2010.

The proposed draft General Permit will likely violate many, if not all, of the above cited statutes and regulations.

B. The Spraying of Imaxamox Will Have Dramatic Negative Effects on the Environment Beyond Killing *Zostera japonica* that Have Not Been Adequately Addressed

The EIS and General Permit

1. The EIS lacks credibility, clarity and ignores a substantial volume of peer reviewed science. These documents were generated by a flawed process which ignored or excluded meaningful input from those other than from the applicants. The result is the flawed result we have before us.

2. The exact shellfish locations, acres to be sprayed and the limitations are not well identified. The definition of areas that can be sprayed is broadened to include most all tidelands in the state by including Eastern Softshell clams. It appears from the information presented, supplemental documents and conversations with Ecology, that spraying will be unlimited in scope and not confined to just Willapa Bay and Grays Harbor, but extending to any Washington waters deemed necessary to be sprayed by the shellfish industry. This should not be allowed without independent comprehensive processes with separate hearings and commend periods.

3. Collateral damage to protected native *Zostera marina* was glossed over in the EIS. It is well recognized and accepted within the scientific community that *Zostera japonica* and *Zostera marina* grow in intermixed meadows and naturally coexist. Imazamox is a member of the Imidazolinone family, "some of the most potent herbicides on the market." It affects vascular plants and does not discriminate between native and Japanese eelgrass and other vascular plants. It will kill *Zostera marina* just as readily as it kills *Zostera japonica*.

4. One of the Puget Sound Partnership goals is to increase eelgrass by 20%, a goal not mentioned in the EIS and a goal that cannot be attained if this proposal is approved. Even though an increase in herring biomass is also a Puget Sound Partnership management goal, the objections to the eradication and spraying of *Zostera japonica* expressed by Daniel Penttila, the foremost Washington State forage fish expert, have been ignored.

5. Both *Zostera marina* and *Zostera japonica* provide similar outputs, benefits and habitat attributes that were well identified in the Seagrass June 2013 Ecology eelgrass seminar. The EIS authors failed to document concisely both the beneficial and negative impacts on the environment. Many of the opinions cited are not substantiated and the opinions of Dr. Patten, which were heavily relied upon, were not backed up by peer reviewed science. In fact, Dr. Patten is an advocate for the commercial shellfish grower's point of view as his WSU job

description makes clear. Neither scientific references nor a concise literature review were provided.

6. Both the Washington Department of Fish and Wildlife and the Washington Department of Natural Resources have expressed valid single and cumulative impact concerns over the probable losses of seagrass habitat for waterfowl. It is notable that the EIS does not mention recent waterfowl counts of over 100,000 ducks and geese and other aquatic birds that are dependent on *Zostera japonica*. The correlation of the extent of eelgrass beds and brant use was positively identified in the 1994 peer reviewed study "Black Brant Winter and Spring-Staging Use at Two Washington Coastal Areas in Relation To Eelgrass Abundance" by Ulrigh W. Wilson and James B. Atkinson. As the study states: "The negative correlations at Willapa [Bay] between brant use and extent of oyster beds, and between the sizes of oyster beds and extent of eelgrass beds, emphasizes the adverse impact the oyster industry has on brant, and may explain why a 22% decline in eelgrass coincided with a disproportionate 52% decline in brant use."

Baldwin and Loveron note that *Zostera japonica* has spread to Puget Sound and south to coastal bays in Oregon and likely plays a similar vital role as valuable waterfowl habitat in those areas as well (John R. Baldwin and James R. Loveron in the Marine Ecology Progress Series, Vol. 103, pp. 11927 (1994). Notably, Oregon, unlike Washington, does not identify *Zostera japonica* as a noxious weed, and Washington's decision to do so was a direct consequence of shellfish industry lobbying.

Zostera japonica's role as providing major waterfowl forage is under-appreciated and inadequately addressed in the EIS. For example, the EIS fails to address the fact that Pacific Brant wintering grounds contain expansive mixed beds of eelgrass which will allowed to be sprayed. Pacific Brant spring staging grounds will also be allowed to be sprayed while staging is actually at its peak. Chum salmon preferred habitat can be sprayed, too, again while smolts are present in numbers. Connectivity considerations around gravel bearing streams of all sizes are absent, even on public tidelands. Loss of carrying capacity for green sturgeon is under estimated/unmeasured.

7. The EIS and the NPDES Permit do not conform to the legislative intent of the Shoreline Management Act, the SEPA process or the Clean Water Act. The spraying proposal does not adequately inform the public of the probable impacts to the natural environment and the ecosystem wide consequences caused by the proposed spraying.

8. Seagrass research completed and ongoing by Mr. Escheveria, the Padilla Bay National Estuarine Research Reserve/Dr. Bulthuis and Dr. Deborah Shafer were not mentioned in the EIS. These researchers are widely recognized in their fields for their contributions to the science of seagrass biology and marine estuary ecology and yet their concerns and objections were ignored.

9. The EIS makes no mention of the vital ecological role that eelgrasses serve in carbon-fixing sequestration and the negative greenhouse gas impacts associated with *Zostera japonica* removal.

10. The proposed spraying obstructs compliance with the Memorandum of Understanding on the Migratory Bird Treaty Act which serves to: "promote the conservation of migratory bird populations through enhanced collaboration between EPA's OPP and FWS on actions carried out by OPP. Migratory birds are an important component of biological diversity, and as such, conserving them and their habitats supports ecological integrity, contributes to public conservation education, and enhances the growing interest in outdoor recreation opportunities." More information is available at www.epa.gov/pesticides/ecosystem/migratory-birds.html.

11. A cumulative impacts analysis was not conducted to consider, let alone evaluate, the effects from the current use of Imazapyr, Glysophate and Carbaryl used by the shellfish industry in Willapa Bay and Grays Harbor. Shellfish from Washington have already been banned by the European Union and China due to toxicity problems.

12. It does not appear that either the EIS and draft General Permit were signed by the Director of Ecology. RCW 43.21A and RCW 43.21.090 and SEPA require that the highest official of the agency sign the EIS and the Permit. The Acting Program Manager for Water Quality does not meet this requirement as he cannot be held accountable or responsible.

The Monitoring Plan

1. The proposed monitoring plan should identify and quantify the acceptable loss of *Zostera marina* to be caused by the spraying of Imazamox, especially given its acknowledged vital ecological role for benthic species, forage fish, and salmon. The proposed monitoring plan also does not include overall monitoring of effects on affected flora and fauna. Such monitoring should have been required.

2. The monitoring and enforcement procedures described in the EIS and NPDES Permit documents are inadequate and rely mainly on self-monitoring by shellfish growers. We have found that, historically, the WDOE has delegated enforcement authority to the Washington Department of Agriculture which, in turn, designates the commercial growers themselves as the "subcontractors" for all important monitoring functions. This is unacceptable and contrary to the intent of the monitoring requirements. Monitoring should be performed carefully, thoroughly, and objectively to prevent biased results. This lack of enforcement violates the Clean Water Act and is the subject of ongoing disputes with the EPA. EPA has provided funding to Ecology to funnel to WDA for this function. Monitors should accompany sprayers on a daily basis during the spray operations to insure against damage to non-target species and drift onto private lands or buffer areas.

3. It does not appear that tidal flows have been adequately evaluated and there is no information on the adverse effects on the adjacent non-target species including all life cycles of vertebrates and invertebrates.

4. The unsubstantiated destruction estimate of 20% of the *Zostera marina* meadows is not even mentioned in the EIS, let alone addressed, or in the Permit, and mentioned only in the proposed monitoring plan. Zoestra marina must be eradicated to the maximum practicable extent and all losses must be mitigated.

5. The lack of a baseline is apparent. There appears to be no monitoring short term or long term effects on fish or wildlife. It is well documented that Chum salmon prefer vegetated beds, yet that fact is ignored. Waterfowl surveys were suspended during the Spartina spraying campaign, so a true picture of effects of historic spraying on waterfowl are not available. Repeated spraying effects are not addressed for *Zostera marina* or for aquatic life. There is no site selection criteria addressing the history of the test site and the test plots themselves will create a permanent unquantified net loss of *Zostera marina.*

6. Monitoring does not include effective management adaptations and alternatives for: Brant, Pintail, and Widgeon. Monitoring should also include impacts to fish eggs (before and after), herring and crab spawning and rearing, native littleneck clams, forage fish, and *Zostera marina.*

7. There is no mention of a multi-disciplinary task force to monitor, evaluate, and enforce the management goals for the plant and wildlife species that will be adversely affected by the proposed spraying. The majority of the aquatic life in the affected waters already fails to meet management goals and this proposal is intended to continue for many years, causing further

long term degradation. We know from past experience, however, that the authorization to use chemicals to kill other species in order to promote aquaculture has resulted in significant negative outcomes for native fish. For example, Carbaryl has been found not to be nearly as benign as initially concluded when its use was authorized. Given this history, a multi-disciplinary task force to perform this function should be created and charged with this responsibility.

8. The most significant reason for not issuing the Permit is the high risk of potentially permanent and substantial adverse impacts to the environment and other species of fauna and flora alike because we know so little about the effects of spraying Imazamox. We do know that sister compounds, for example, Imazapic, are quite toxic and the application of this chemical in marine ecosystems threatens other species of plant, animal and, in particular, bird life. The likely synergistic effects with other chemicals or compounds in the environment have also not been considered. There should be an appointed body of recognized experts to effectively and closely monitor the toxic effects of the proposed spraying activities.

9. The past pesticide spraying at the request of the shellfish industry in the Willapa Bay/Grays Harbor area as described by Larry Warnberg in Exhibit A, who was involved with those efforts, provides inadequate confidence for the environmental and human health safety of this new proposal.

C. The Proposed Permit Should Not Be Issued for Any Waters that are "Water Quality Limited," But Do Not Yet Have TMDLs.

EPA regulations, consistent with 301(b)(1)(C) of the Clean Water Act, prohibit a "new source of pollution or new discharger if the discharge from its operation will cause or contribute to the violation of water quality standards." 40 C.F.R 122.4(i). The only exception to this prohibition exists where there is a TMDL in place, but only if the new source or new discharger demonstrates before the close of the comment period, that: (1) tThere are sufficient remaining pollution load allocations to allow for the discharge; and (2) the existing discharges into that segment are subject to compliance schedules designed to bring the segment into compliance with the applicable water quality standards.

In *Friends of Pinto Creek v. U.S. E.P.A.*, 504 F.3d 1007 (9th Cir. 2007), *cert. denied*, 129 S.Ct. 896 (2009), the Ninth Circuit Court of Appeals held that without a plan to achieve water quality standards, a permitting agency cannot allow any new discharges that will exacerbate the existing water quality standards violations. The Court held that all existing discharges must be subject to compliance schedules. 504 F.3d at 1012-13. It also ruled that "if there are no

adequate point sources to do so, the permit cannot be issued unless the State or the [discharge permit applicant] agrees to establish a schedule to limit pollution from a nonpoint source or sources sufficient to achieve water quality standards." *Id.* at 1014.

In other words, a TMDL is a necessary condition for a source to use the exception provided in EPA rules to the general prohibition on new sources into impaired waters, but a TMDL by itself is not sufficient. Reduction from sources, whether point or nonpoint, under compliance schedules, is also necessary. Here, there has been no such demonstration, and Ecology may not merely rely on a permit statement that it does not allow discharges that will cause or contribute to violations of water quality standards because it is the Department's obligation to only issue permits that will comply with the Clean Water Act. 40 C.F.R. § 122.4(a). Likewise, Ecology may not issue a permit if it does not contain the requirements necessary to "achieve water quality standards established under § 303 of the CWA, including State narrative criteria for water quality." 40 C.F.R. § 122.4(d).

A permit is required to contain "limitations to control all pollutants or pollutant parameters … [which] may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standards, including State narrative criteria for water quality." 40 C.F.R. § 122.4(d)(i).

Here, the proposed discharge is into a WQL water body and it will therefore cause or contribute to diminished water quality standards. Therefore, to allow this proposed discharge, Ecology would be obligated to issue a Permit with effluent limitations to prevent such an outcome – which, in any event, is prohibited by 122.4(i) – taking into consideration the lack of existing controls on other pollution sources, both point and nonpoint. Since Ecology cannot issue such a Permit, it is prohibited from allowing the discharge.

As the conditions into which the Imazamox is proposed to be applied are site-specific, and because non-target species, including native eelgrass, will be adversely affected by the application of Imazamox, the issuance of a GP is not appropriate. Rather, individual permits should be required that are site-specific. At the very least, Ecology needs to condition any GP on the applicant's full compliance with FIFRA, the Federal Insecticide, Fungicide, and Rodenticide Act, and require compliance with the applicable FIFRA's labels for the chemical involved.

2. Comments on the Scope of the Upcoming Environmental Impact Statement (EIS) for the Use of Imidicloprid for the Control of the Burrowing Shrimp on Commercial Shellfish Beds in Willapa Bay and Grays Harbor.

Two formulations are proposed: "Protector 0.5G" and "Protector 2F" that would be applied by helicopter, backpack sprayer, ground based vehicle or "belly grinder," depending on the formulation and circumstances.

1. The initial research and evaluation of the Plauche & Carr Risk Assessment for Use of Imidicloprid to Control Burrowing Shrimp in Shellfish Beds in Willapa Bay and Grays Harbor provide inaccurate conclusions that will bias the EIS scoping process in favor of the commercial shellfish industry represented by the Plauché Carr law firm.

2. A significant amount of relevant material that contradicts major findings financed by Bayer was ignored as well as ecotoxicological findings pertaining to invertebrate and non-mammalian invertebrates. A complete literature review on this issue should include all relevant reports, not just those favorable to industry.

3. The Western Ecology Division website includes information titled "Burrowing shrimp have important impact on Pacific Northwest estuaries." The scoping document must include all of the "ecosystem-wide consequences on nutrient dynamics, food-web structure, oyster farming and water quality in Northwest estuaries."

4. It appears that substantial amounts of Imidacloprid are necessary to control burrowing shrimp which could lead to encouragement of excessive amounts being actually sprayed.

5. A cumulative impacts analysis is needed to accurately assess the adverse impacts on aquatic plant and animal life as well as the effects of multiple chemicals being used in the same estuary.

6. The extent of spraying needs to be well identified as the adverse effects on spraying both an herbicide and pesticide on virtually the entire upper and middle intertidal area with pesticides is significant. It appears that the upper intertidal clam grounds are already being targeted for the spraying of Imazamox and now middle intertidal oyster beds would be targeted for spraying of Imidicloprid. There is no doubt that drift from the spraying would adversely affect this entire area. It appears to be, in effect, a wildlife elimination program.

7. A joint analysis needs to be conducted that identifies the sustainability of a program of removing vascular vegetation (*Spartina*, *Zostera japonica*, *Zostera marina*) from commercial shellfish areas because that, in turn, promotes the expansion of burrowing shrimp in un vegetated mudflats and then leads to requests by the shellfish industry for additional pesticide control. The cycle must stop.

In that regard, we refer you to the document titled "An Analysis of the Commercial Pacific Oyster Industry in Willapa Bay, WA: Environmental History, Threatened Species, Pesticide Use and Economics by Emily Sanford, April 2012. This document includes an analysis of the commercial Pacific Oyster and the events at the Bone River flats that supports concerns regarding unsustainable actions on behalf of the shellfish industry that result in long term ecological damage.

8. Since birds heavily depend on the aquatic system as the center of their food web, the expected reduction and contamination of insects in their prey base is a major consideration that must be addressed and has not been.

9. Direct effects to juvenile stages of threatened and endangered species must also be considered. Both exposure to chemicals and loss of food resources are major issues to be considered and they were not.

10. The scope of the EIS should include an evaluation of Imidocloprid's movement post treatment and possible effects to ESA listed and non-listed species, both lethal and sub lethal, need to be identified and evaluated. In addition, the various cycles of degradation and the risks should not be underestimated.

11. Imidicloprid, considered a neurotoxin, is a known bee killer. Beekeepers in Washington and around the United States have expended significant efforts to stop the use of this pesticide due to the devastating effects on bees and their hives. The EIS must include a significant analysis of the effects on bees and the relevant research; research that is being constantly updated.

12. The scope of the EIS must include an Integrated Pest Management alternative which includes monitoring, economic thresholds and non-chemical alternative options.

CONCLUSION

Ecology may only issue a Permit that is consistent with all applicable state and federal laws and regulations, including the Clean Water Act. In doing so, it must place protection of the existing and designated beneficial uses of the State's waters at the forefront of its analysis and regulatory actions. Federal regulations give guidance to the Department in weighing one set of designated uses against another by requiring states "for waters with multiple use designations, (to adopt) criteria (that) shall support the most sensitive use." 40 C.F.R. 131.11(a). Ecology is therefore obligated to provide protection to the most sensitive uses; aquatic and aquatic-dependent species such as migratory waterfowl and salmonids over protection to the shellfish industry and its desires to maximize its profits and expand its production in public waters and tidelands. There is no evidence that the proposed General Permit will fully comply with these applicable federal and state laws and regulations. Willapa Bay, as well as Grays Harbor and Puget Sound have all already experienced enormous habitat loss and interference with critical ecosystem functioning. A long term perspective, including the effects of climate change, should be integrated into the process for consideration of issuing spray permits and preparation of EISs and their scoping documents. Large corporate shellfish growers have been more than an incidental contributors to habitat destruction and diminishing aquatic species in these water bodies. The commercial shellfish industry should not be allowed to add to even greater destruction with not just one, but possibly two spray proposals. In that regard, Willapa Bay was referred to as a "chemical soup" by the Washington Attorney General in the 2012 Thurston County Superior Court motion for summary judgment Case No: 08-2-02042-5. Its existing heavily-degraded state should not be further degraded.

For the above reasons, we urge Ecology to deny the proposed General Permit and more carefully and completely consider the significant environmental adverse impacts that are already well known regarding the use of Imazamox and Imidicloprid and retain the use of non-chemical options.

Sincerely,

Laura Hendricks
Coalition to Protect Puget Sound Habitat

Thane Tienson
Attorney for Coalition to Protect Puget Sound Habitat

Additional information on the burrowing shrimp control proposal is available on Ecology's website: http://www.ecy.wa.gov/programs/wq/pesticides/imidacloprid/index.html

Additional information on the non-native eelgrass control proposal is available on Ecology's webpage on the non-native eelgrass proposal:
http://www.ecy.wa.gov/programs/wq/pesticides/eelgrass.html

EXHIBIT A

January 31, 2014 Email from Larry Warnberg:

Hi Derek and Greg:

Thanks for the opportunity to respond. Due to prior commitments, I will be unable to attend the Feb.1 meeting in South Bend. Please register my strong opposition to the use of pesticides in Willapa Bay by shellfish growers. I farmed oysters and clams successfully in Willapa Bay for 25 years without using pesticides, as did many other shellfish growers. Only a few companies are pursuing permits for pesticides. There are non-chemical alternatives available. As you know, I am a member of the Ad Hoc Coalition for Willapa Bay, which brought a legal challenge to the use of carbaryl for control of burrowing shrimp. A Settlement Agreement resulted in the phasing out of carbaryl, although the chemical Growers fudged on the deal, spraying last Summer in violation of our Agreement. If Ecology grants permits for the new pesticides for shrimp and eelgrass, then litigation is sure to follow. Next time there will be no Settlement Agreement for the Growers to ignore. As part of the Settlement Agreement the Ad Hoc Coalition was given a seat at the annual Burrowing Shrimp Committee meeting. I attended all of the meetings over the past 10 years, watched as the Growers spent a lot of public money pursuing alternative pesticides, another violation of our Agreement. I also learned that the Growers pulled some political strings to get the cost of their NPDES permit waived, passing along their costs to other NPDES permittees and taxpayers. I received the Annual Reports of carbaryl spraying submitted to Ecology by the Growers. There were numerous instances of spray drift exceeding the allowed buffers, yet there has not been a single enforcement action for these violations. In 2006, there was an incident in Grays Harbor where the helicopter spraying carbaryl went down due to mechanical problems. Fortunately, there was no fuel or pesticide spill, but if Ecology permits further pesticide spraying in the estuaries there is the possibility of grave damage to the ecosystem from accidents.

Derek, since we have both attended the Shrimp committee meetings, we both know Kim Patten's research has shown imidicloprid has little effect on shrimp at the .5 pounds per acre application rate that EPA will allow. Two pounds per acre was the minimum needed for efficacy. Do you think the Growers will honor the required application rate? Why would they waste their time and $$? Or will they simply use a higher rate, while Ecology looks the other way? There is plenty of evidence that Ecology has in the past failed to protect public interests and the ecology of these estuaries. For many years, the Growers stalled and delayed development of an Integrated Pest Management plan for shrimp control, in spite of a Memorandum of Agreement they signed with State agencies in the '90s. When an IPM plan was finally submitted in 2003 it lacked the most important component of any IPM plan: an economic threshold for pest damage to the crop. You may recall that I protested many times that their IPM plan was worthless without such an assessment. A theoretical computer model devoid of any real facts was submitted in the IPM plan. Ecology accepted the plan as complete and satisfactory. Over the subsequent decade the IPM plan was never used nor had any influence on shrimp control efforts.

If Ecology issues NPDES permits for two new pesticides in Willapa Bay it will be business as usual: spraying native shrimp to protect crops of non-native shellfish. While japonica eelgrass is not native, it arrived with the Japanese oysters, and is naturalized in the estuaries, and here to stay. There are dozens of non-native plants and animals that have arrived through various routes, some considered valuable, some invasive and damaging. Managing problem species will be an ongoing challenge in the future. Ecology should take the long-term broad view by encouraging ecosystem stability, not abetting the short-term profit-oriented interests of a few shellfish growers. The goal of the National Pollutant Discharge ELIMINATION System is to ELIMINATE polluting discharges to waterways. Ecology now has a golden opportunity to prevent pollution by denying permits for these two pesticides.

I urge it to do so.

Larry Warnberg
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